The volume of gas per second is found as follows :

$$0iooo = 3.3 :5 = 0m^3 66$$

01000

14

The consumption of coal per second is arrived at as follows:

1 kg of coal gives about 9 m^3 00 of gas, and, accordingly:

= 0 kg 0155 per second=about 55 kg 80 per hour.

9.00

The dimensions of the fireboxes were the same as before,

$$o,=4XlX0.56 = 2m^2 24,$$

and corresponded with a fuel consumption of 25 kg of coal per square meter of grate per hour. The rate of combustion was rather slow, a condition which is particularly favorable for realizing theoretical combustion.

The area of the hot gas ports from the firebox:

$$«i = 4XO.\ 16X0.32 = 0\ m^2\ 20.$$

The velocity in these parts is low:

$$^iooo = 0.66 : 0.20 = 3\ m\ 20 \text{ per second.}$$

The area of the waste gas ports is

$$co_2 = 16XO.24X0.12 = 0\ m^2\ 46.$$

The velocity in these ports is

$$^iooo = 0.66 : 0.46 = 1\ m\ 43 \text{ per second.}$$

These low velocities make it certain that the waste-gas flue will receive the coolest gases in the chamber and are also very favorable to the obtaining of a uniform temperature over the whole hearth of the muffle.

The height of the waste-gas flue according to Yesmaim's formula is 0 m 38.

The computation for the chimney was not made, as the existing chimney was amply sufficient and gave a large margin of safety, the velocity of the gases at its outlet being very nearly zero.